REMARKS

The undersigned Counsel of record submitted a Change of Correspondence Address, which was received at the PTO on April 17, 2003. (Copies of the Change of Correspondence Address and the acknowledgement postcard from the PTO are submitted herewith for reference.) However, the Office Action of August 10, 2005 was sent to an old address, and Counsel was fortunate to receive it at all. The PTO is again asked to please be sure that the correct correspondence address has been entered in the PTO records so that all correspondence will be correctly directed.

A Letter Submitting Formal Drawings, responsive to the requirement in the Office Action, is submitted herewith.

The Abstract has been shortened, as required, and the new Abstract is attached.

Claims 1-20 have been rejected under 35 USC 102(b) as being anticipated by Hall et al. U.S. Patent 5,661,778. Applicant respectfully traverses this rejection and requests reconsideration.

Before treating the citation and the claims, the background setting in which the invention was made will be summarized.

Audio Tone Teleprotection is a method of communicating binary states from one substation to another over audio telecommunications links. These binary states are used, for example, to control power line circuit breakers and generators. This practice has existed for over 30 years and has principally been applied over entirely analog systems such as Frequency Division Multiplexers, Analog Microwave, and Direct

Analog Fiber.

When a signal occurs in any of the above media, noise occurs at the input of the teleprotection and circuitry inside the teleprotection is designed to prevent a "misoperation". A misoperation is a false state on one of the binary outputs. The result of a false output can be disastrous, e.g. blackouts, fires, and/or equipment damage. It is important to prevent these misoperations in the event of loss of signal, since systems like digital microwave are frequently susceptible to loss of signal, usually due to adverse weather conditions.

With the recent proliferation of telecommunications has come the practice of applying audio teleprotection over Time Division Multiplexed (TDM) digital communications networks. Under failure conditions, different noise patterns occur at the input of the teleprotection. These noise patterns can very closely mimic valid signals indicating incorrect states, possibly causing misoperation of the teleprotection equipment. With standard telephone grade multiplexers, a noisy signal is output from the voice channels for up to 2 seconds after a complete loss of signal.

An important object of the invention was to provide a method and apparatus which overcomes disadvantages of existing approaches such as those described, and to prevent misoperations of teleprotection systems in the event of TDM signal loss. It was also an object of the invention to achieve this in a way that is compatible with existing teleprotection design, due to the large installed base of teleprotection equipment.

As indicated, the present invention has application for use in conjunction with a system for producing, at a transmitter location, time division multiplexed (TDM) frames comprising a plurality of channels of information signals and framing signals, communicating the frames from the transmitter location to a receiver location, and, at the receiver location, deframing the received frames to obtain frame timing signals and a bitstream of information signals which are coupled with a plurality of operating units. In accordance with the invention, a technique and an apparatus are provided for responding very quickly, upon loss of the TDM signal, to prevent misoperation of the operating units. In this regard, claim 1 recites the following steps: at the transmitter location, inserting a preselected pattern of bits in a timeslot of the information signals; at the receiver location, detecting, in the deframed bit stream, the absence of the preselected pattern of bits, and producing a control signal in response thereto; and producing override information signals that are coupled to the operating units when the control signal is present.

Dependent claim 2 further recites the step of producing, at the receiver location, auxiliary frame timing signals for use when the control signal is absent, and dependent claim 3 recites that the auxiliary frame timing signals are derived from the timing of the preselected pattern. Dependent claim 6 recites that the step of detecting, in the deframed bit stream, the absence of the preselected pattern of bits, and producing a control signal in response thereto, includes detecting the absence of two successive occurrences of the preselected pattern of bits, and producing the control signal in

response thereto.

The Background portion of the Hall Patent describes the problem that Hall addresses. Briefly, Hall notes that telephone companies have been slow to convert to or integrate digital signalling subsystems and communication schemes into established copper wire telephone networks employing signalling equipment. Still, because of substantial user demand, telephone operating companies provide leased-line digital services to sophisticated customers, who maintain their (digital) communications networks with intelligent management systems that provide detailed information regarding the quality of the service being delivered. Hall further pointed out that the network topographies and operating schemes embedded in the networks did not provide adequate information about the performance of the (digital) service access metallic loops between the serving central office and the network interface at the customer's premises. As a consequence, the telephone companies were not readily prepared to deal with a customer who, based upon the customer's own analysis of the data traffic, alleges that the published digital services specifications are not being fulfilled. Also, the local telephone company lacks the information needed to observe the success of its own objectives toward delivering the services and means to rapidly detect and respond to degradation or outage in service. Hall then states that because of these recognized shortcomings, the telephone companies sought to upgrade the diagnostic tools employed for their digital carrier links to schemes that provide them with the ability to monitor the performance of their metallic loops. Thus, the problem

posed by Hall was how to better monitor the performance of an existing low speed link using the digital carrier links.

As a solution to the stated problem, the Hall citation claims to do the following two things: (1) Provide an auxiliary communications link inside a D4 channel back between the channel unit and a line interface unit. The stated purpose of this link is to retrieve performance data from the channel unit and provide this to an outside device via an RS232. (2) Provide a method of getting performance data from the customer end equipment back to the channel unit using the signalling bits on that link. This allows the channel unit to report this data via the communications link.

Accordingly, at the outset, it is seen that the problem which the Hall citation sought to solve was different than the above-summarized problem that Applicant sought to solve; namely, how to almost instantly prevent misoperation of operating units (e.g. of a teleprotection system) in the event of TDM signal loss. It is then also seen, at the outset, that the solution provided by the Hall citation was different than the above-summarized solution provided by Applicant's claimed invention.

The Examiner has found some valid correspondence between parts of the preamble of Applicant's claim 1 and elements of the Hall citation. This is not at all surprising, since these elements are part of a standard TDM communications system which Applicant acknowledged as old and, indeed, this is why they are in the preamble portion of Applicant's claims. However, the combination of steps in the body of Applicant's claims are certainly not disclosed or suggested in the Hall citation.

Applicant's claim 1, for example, recites that at the transmitter, a preselected pattern of bits is inserted in a timeslot, and at the receiver, the absence of this bit pattern, in the deframed bit stream, is detected and, in response, a control signal is produced. When the control signal is present, override information signals are produced and coupled to the operating units. As described in detail in Applicant's specification, this solves the vexing problem in the art of misoperation of the operating units.

The Office Action points to the producing of a control signal and states that Hall discloses "producing override (overwrite, col. 10 lines 24-29) information signals that are coupled to said operating units when said control signal is present." However, a close examination of the Hall citation reveals that it contains no such teaching. The passage of Hall referenced by the Examiner states the following:

> "The multi-frame control signal on line 105 is aligned with the first bit (bit 1) of frame one of the superframe (SF). Framer 97 uses this multi-frame control signal to determine how to overwrite the SF framing bit with the ESF framing bit in accordance with control data supplied by way of a framing status and control register 111 that has been loaded by a supervisory microcontroller 110 via a control link 113. Register 111 of framing/deframing unit 90 is used by microcontroller 110 place framer 97 in a superframe or extended superframe mode of operation."

From this language, as well as from Figure 4 of Hall to which it pertains, it is seen that the "multiframe control signal" on line 105 is coupled to framer 97 which is part of the circuitry generating signals coupled back to the T1 transmitter. The "overwrite" of Hall is nothing whatsoever like the step recited in Applicant's claim 1 of producing override information signals that are coupled to the operating units when the control signal is present. In Hall, the control signal on line 105 merely controls part of the data

communication process. As stated in the quoted passage the control signal is used in determining how to overwrite a SF (superframe) framing bit with an ESF (extended superframe) framing bit. As first summarized above, this is part of the previously listed Hall task number (2); namely, using signalling bits as part of the process of allowing the channel unit to report performance data. This is nothing at all like the preventing of misoperation of operating units which Applicant achieves. As seen, Hall addresses a different problem, and solves it in a different way. Hall does not disclose or suggest the steps of Applicant's claim 1, and the Hall system and technique does not and cannot be used to solve the problem that Applicant addresses and solves.

The arguments set forth with regard to independent method claim 1 are also applicable to independent apparatus claim 11, which has similar limitations in apparatus terms.

The foregoing is believed to be completely dispositive of the issue of patentability, but Applicant notes that the dependent claims provide even further distinction over the prior art. For example, dependent claim 2 (and corresponding apparatus claim 12) recite the step of producing, at the receiver location, auxiliary frame timing signals for use when the control signal is absent. In this regard, the Office Action references col. 2, lines 13-25 and col. 11, lines 1-5 of Hall. However examination of these passages reveals that Hall is describing an "auxiliary signaling and performance monitoring" that is accessed by a remote or local control site, such as by way of an RS-232 port of a line interface unit of a channel This has nothing to do with producing auxiliary frame timing signals, as defined in Applicant's claims, for use when the control signal is absent. Indeed, when taken in the context of the independent claim from which it depends, there is nothing in Hall that even remotely suggests the summarized limitation of Applicant's claims 2 and 12.

A further example is the limitation in Applicant's dependent claim 3 (and corresponding apparatus claim 13), which recites that the auxiliary frame timing signals are derived from the timing of the preselected pattern. The Office Action references col. 2, lines 20-25 in this regard. However, the cited passage is inapposite in that it states:

> "The signaling format on the bidirectional signalling link is defined to support the transmission of incoming (received DSI) signalling traffic from the line interface unit to an office channel unit, and the bidirectional exchange of performance-monitoring command and response messages."

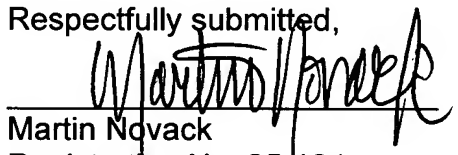
What does this have to do with deriving of timing, much less timing of auxiliary frame timing signals derived from the timing of a preselected pattern? In the absence of any relevant teaching the rejection cannot be sustained.

A still further example is the limitation in Applicant's dependent claims 6 and 7 (and corresponding apparatus claims 16 and 17), which recite that the step of detecting, in the deframed bit stream, the absence of the preselected pattern of bits, and producing a control signal in response thereto, includes detecting the absence of two successive occurrences of the preselected pattern of bits, and producing the control signal in response thereto. The Office Action references eight different passages of Hall as disclosing this feature; namely, col. 9 lines 50-60; col. 13 lines 35-45; col. 14 lines 1-8; col. 15 lines 5-10; col. 16 lines 10-15; col. 17 lines 25-30; col. 18 lines 35-40; and col. 18, lines 50-55. Applicant has studied all eight of these passages, and none of them disclose or suggest the limitation at issue. None of the passages

even mentions detecting the absence of two successive occurrences of a preselected pattern of bits, much less the producing of a control signal in response thereto. If the Examiner has any intention of persisting with the rejection of claims 6, 7, 16 and 17, in all fairness it is requested that he specifically identify the language of Hall that he is arguing anticipates the claim language at issue. Otherwise, the rejections cannot be sustained.

In view of the foregoing, it is believed that the Application is now in condition for allowance, and such favorable action is earnestly solicited. In the event that the Examiner is not persuaded, it is asked that he kindly telephone the undersigned Counsel collect so that any remaining issues can be resolved.

Respectfully submitted,



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November 10, 2005
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Docket No. RFL-1201

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): William G. Higinbotham, Paul Palamara, Robert Walker and Xin Luo

COPY

Serial No. : 10/057,799 Group: 2661

Filed : October 26, 2001

For : METHOD AND APPARATUS FOR COMMUNICATING SIGNALS

CHANGE OF CORRESPONDENCE ADDRESS OF ATTORNEY

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, DC 20231, on April 4, 2003 (Date of Deposit)
Martin Novack
Name of applicant, assignee, or registered rep.
Martin Novack 4/4/03
Signature Date

Assistant Commissioner for Patents

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Sir:

Kindly change my address to the following and send all correspondence to the new address:

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Respectfully submitted,

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(U-15)

COPY

This acknowledges receipt at the PTO, on the date indicated, of:

CHANGE OF CORRESPONDENCE ADDRESS AND STATUS INQUIRY

in the following application:
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